

REMARKS

The Office Action dated December 19, 2007 has been reviewed and carefully considered. Claims 1, 2 and 5-12 remain pending as claims 2, 4, 13 and 14 have been cancelled. Claims 1, 3, 6, 11 and 12 have been amended. Claims 1, 11 and 12 are the only independent claims. Reconsideration of the above-identified application, as amended and in view of the following remarks, is respectfully requested.

The drawings stand objected to because “the unlabeled rectangular boxes shown in the drawings should be provided with descriptive text labels.” In response, replacement sheets have been provided for Figs. 1 and 3. Accordingly, Applicant respectfully requests removal of the objection.

Paragraph 3 of the Office Action states that the January 12, 2006 information disclosure statement fails to comply with 37 CFR §1.98(a)(3) as “it does not include a concise explanation of the relevance ... of each patent listed that is not in the English language.” Applicants respectfully disagree as the “INFORMATION DISCLOSURE STATEMENT TRANSMITTAL” form which accompanied the January 12, 2006 information disclosure statement (copies of both attached hereto) recites the relevance as the disclosed references were cited in a search report of a foreign counterpart application. Accordingly, Applicant respectfully requests that the disclosed foreign references be considered by the Examiner and so acknowledged in the prosecution history.

Claims 13 and 14 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Claims 13 and 14 have been cancelled. Consequently, this rejection is now moot.

Claims 1, 7 and 11-13 stand rejected under 35 USC §102(b) as being anticipated by Lowry et al., U.S. Patent No. 5,787,398 (Hereinafter “Lowry”). Claims 2-5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lowry in view of Gersho et al., US 2001/00223396 (Hereinafter “Gersho”). Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lowry in view of Gersho and Nishiguchi et al. , U.S. Patent No. 5,832,437 (Hereinafter “Nishiguchi”). Dependent claims 8, 9 and 10 stand rejected under various combinations of the above references in light of additional prior art or Applicant’s alleged admitted prior art.

With respect to the §102 rejection, claim 13 having been cancelled, the rejection as to this claim is now moot. Applicant has amended each of independent claims 1, 11 and 12 to include the limitations of claims 2 and 4. Consequently, claims 1, 11 and 12 will be discussed below with respect to the §103 rejection of claims 2 and 4.

Claim 1 as amended recites:

1. A method of synthesizing of a speech signal, comprising:
 - assigning a first identifier to steady intervals of an original speech signal and assigning a second identifier to dynamic intervals of the original speech signal,
 - windowing the original speech signal to provide a number of pitch bells,

processing the pitch bells having the first identifier assigned thereto for modifying a duration of the speech signal, and performing an overlap and add operation on the processed pitch bells.

As recited above, the present invention relates to a method of synthesizing a speech signal in which speech pitch bells having the first identifier (i.e. steady intervals) are used to modify a duration of the speech signal.

Lowry et al. teaches speech an apparatus in which “The pitch of synthesized speech signals is varied by separating the speech signals into a spectral component and an excitation component” (Abstract). The Examiner points to col. 2, lines 19-26 and col. 3, lines 25-29 of Lowry as teaching the processing pitch bells feature of claim 1. As an initial matter it should be noted that this section of Lowry requires an LPC analysis of the speech signal to obtain “excitation and vocal tract components” (col. 3, lines 15-18). Using this information, the pitch of a residual signal is modified (col. 3, lines 25-26).

The present invention fails to require this type of LPC analysis -- as what is recited in claim 1 is a distinction being made between steady and dynamic intervals. This is a significant distinction. By way of example, the specification of the present invention discusses how this determination can be made manually [0023], which is incompatible with the LPC analysis of Lowry. Moreover, Lowry fails to teach or imply identifying steady and dynamic intervals and modifying duration of speech based upon identified steady intervals.

The Office Action acknowledges that Lowry “does not specifically mention the first class of intervals being steady intervals....However, Gersho et al teach the first class of intervals being steady intervals (‘steady state voice’ from Paragraph [0089], lines 5-9).” Gersho relates to “encoding speech for communication to a decoder for reproduction” in which various coding techniques are used for various steady vs. transition speech types of speech (Abstract). Paragraph [0089] in particular recites “to overcoming harmonic coder limitations which are inherent to the voiced/unvoiced model, the present invention introduces a third coding model for the representation of the transition segments to create a hybrid model of speech coding.”

As an initial matter, Applicants submit that the teachings of Gersho’s encoding of speech are not readily combined into Lowry’s invention in which pitch is varied during speech synthesis. Moreover, such a combination is not obvious.

Further, Gersho requires that a “special coding mode is used for transition speech, designed to capture the location, the structure and the strength of the local time events that characterize the transition portions of the speech” [paragraph 90]. Applicants submit that such a coding mode is incompatible with the teachings of Lowry. Moreover, even if the combination of Lowry and Gersho were viable, this combination fails to teach the features of the present invention as claimed in claim 1, wherein speech is synthesized using pitch bells having the first identifier (i.e. steady intervals) to modify a duration of the speech signal.

A claimed invention is *prima facie* obvious when three basic criteria are met. First, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings therein. Second, there must be a reasonable expectation of success. And, third, the prior art reference or combined references must teach or suggest all the claim limitations.

Having shown that the combined device resulting from the teachings of the cited references does not include all the elements of the present invention, Applicant submits that the reasons for the Examiner's rejections of the claims have been overcome and can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of the claims.

In the matter of obviousness there is a great emphasis placed on "the importance of the motivation to combine." For example, the court in Yamanouchi Pharmaceutical Co. v. Danbury Pharmacal, Inc. 231 F. 3d. 1339, 56 USPQ2d. 1641, 1644 (Fed. Cir. 2000) found that:

an examiner ... may often find every element of a claimed invention in the prior art. If identification of each claimed element of the prior art was sufficient to negate patentability, very few patents would ever issue. Furthermore rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner ... to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention ... To counter this potential weakness in the obviousness construct, the suggestion to combine requirements stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness. *id.* quoting In

re Rouffet, 149 F.3d 1350, 1357-58, 47 USPQ 2d 1453,
1457 (Fed. Cir. 1998)

In this case, Applicant believes that with regard to the referred-to claims, the Examiner has impermissibly incorporated the teachings of the present invention in the cited reference to reject the claims. Accordingly, Applicant submits that the reasons for the Examiner's rejections of the claims have been overcome and the rejection can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of the claims.

In view of the foregoing discussion, the Office Action has failed to make out a *prima facie* case of obviousness, instant independent claim 1 is allowable, and the rejection should be withdrawn. Independent claims 11 and 12 recited similar features and are deemed patentable for the same reasons.

Claims 3 and 5-10 are dependent from claim 1 discussed above, and are believed allowable for at least the same reasons and any rejections thereof should be withdrawn. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In particular with respect to claim 5, Applicants respectfully disagree with the assertion in the Office Action that Gersho's paragraph [0090] teaches the features of a third, fourth, fifth, and sixth code as recited in the claim (Page 7, 2nd paragraph – page 8,

1st full paragraph). Applicants fail to see how six codes are even identified, much less how they correlate with the specific code definitions contained in claim 5.

In particular with respect to claim 6, this claim has been amended to state “pitch bells being assigned to the sixth code [i.e., a voiced interval not being essential for the intelligibility of the speech signal] are deleted optionally. Applicants submit that the cited Nishiguchi reference (in particular, col. 10, lines 34-42 cited in the Office Action at paragraph 7) fails to teach this feature of the present invention.

For all the foregoing reasons, it is respectfully submitted that all the present claims are patentable in view of the cited references. A Notice of Allowance is respectfully requested.

Respectfully submitted,

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